NEW ZEALAND PEDESTRIAN PROFILE

AN OVERVIEW OF PEDESTRIAN ACTIVITY & INJURY IN NEW ZEALAND

NATIONAL PEDESTRIAN PROJECT, NOVEMBER 2000

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WHY A NEW ZEALAND PEDESTRIAN PROFILE?

Imagine being given the choice between losing your ability to walk or your ability to drive a car - which would you choose?

Walking is our most fundamental transport activity. Since the dawn of mankind, the ability to walk has helped to define us as human. Even now a child's first steps are eagerly anticipated and celebrated as one of life's important milestones.

Yet once our first steps are taken, walking quickly becomes taken for granted. Few of us are aware of the extent of our daily pedestrian activity. Even fewer would define ourselves as 'pedestrians'.

This Profile aims to make visible the extent and importance of pedestrian activity and injury in New Zealand. Its focus is on walking as a transport mode, and it aims to provide an accessible overview to those who plan our communities, manage our roads, or are concerned about the safety of our transport environment.

The development of a profile is timely. For many years our transport planning has centred on creating road environments that make it quicker, safer, easier to get around - by motor vehicle. Unfortunately this has sometimes been at the expense of access and safety for non-motorised modes such as walking. It is no wonder, then, that we are walking less; and that pedestrian injury rates in our urban communities remain high.

We ignore any decline in walking at our peril. In our towns and cities, each trip no longer taken on foot means another motor vehicle adding to increasing congestion on our roads. Each ride a child must be given to school adds to the loss of our children's independent mobility. It is hoped that the information in this profile will be useful in informing debate, further research and action to ensure a healthy future for this essential transport mode.

Reena Kokotailo
National Pedestrian Project

ACKNOWLEGEMENTS

The National Pedestrian Project would like to thank the Road Safety Trust for its funding support for this *Profile*. Also Bill Frith, Lynley Povey, Chris Hewitt, Paul Graham, Cherie Urlich and Wayne Jones (all of LTSA) for their support with data provision and analysis.

New Zealand Pedestrian Profile – Key Point Summary

The importance of walking

1. Walking is the glue that binds our urban transport systems together. It is not only an essential transport mode for those with limited access to a motor vehicle, and an integral component of most public transport trips, but also an important part of many motor vehicle journeys. A survey of regional household travel in the Auckland region found that 36% of travel journeys combined motor vehicle use with pedestrian activity.

2. Walking is a sustainable, efficient and economical mode for short journeys. As a nation, around 46% of our household travel trips are estimated to be for distances of under two kilometres. The sustainability of our transport system depends not only on increasing the efficient use of the transport network by motorised traffic for long journeys, but also increasing the use of non-motorised modes such as walking for short trips, particularly in our urban areas.

3. Walking has considerable economic, health & social benefits. It provides valuable cardiovascular exercise for individuals, enhances the liveliness of communities, supplies the 'foot traffic' that is essential to local businesses, provides the 'eyes on the street' that help keep our neighbourhoods safe, and enables older members of the community to remain socially connected.

When we get out of our cars we are <u>all</u> pedestrians.

Pedestrian activity in New Zealand

1. Walking makes up a significant proportion of the travel of New Zealanders. According to the New Zealand Travel Survey (1997/98), of the more than 6 billion trips estimated as being undertaken by New Zealand households annually, 1.1 *billion* (18.7%, or nearly one in five) are undertaken on foot. Walking accounts for seven times as many trips as public transport, 10 times as many trips as cycling.

2. Walking is particularly significant in the travel of children and young people, and older adults. Women, Pacific peoples and Maori tend to spend more time walking, as do people at the top and bottom of the economic spectrum, and those living in urban areas.

3. Around 70% of walking trips involve walking as the sole mode of transport used to get to a destination. However, around 30% occur as part of 'multi-mode' journeys involving other modes of transport (e.g. public transport).

4. We walk for a wide variety of purposes - social/leisure trips are most common, followed by shopping trips, then education and work trips.

5. Walking is on the decline. The percentage of our travel journeys in which walking was the sole mode of transport dropped 3% between 1989/90 and 1997/98. This equates to approximately 400,000 fewer 'walk only' trips being undertaken by New Zealanders each day. Most of these trips are now being undertaken in private motor vehicles.

Key point summary continued over page...

Nearly one in five of our travel trips is undertaken on foot.

Pedestrian injury on New Zealand roads

Pedestrians account for one in four deaths on our urban roads.

1. Pedestrians account for one in nine road deaths nationally, one in four deaths (28%) on our urban roads.

2. The social cost of road crashes involving pedestrians is significant - an estimated $290 million annually.

3. Children are at greatest risk of pedestrian injury, followed by older adults and young people. Pacific peoples are at greater risk than Maori, who in turn are at greater risk than Pakeha.

4. The vast majority (92%) of pedestrian injuries occur on urban roads, especially the relatively busy roads that bisect our suburbs and urban communities. More than half occur on 'arterials', and a quarter on 'distributors/collectors'. Only one in five occur on streets designated as 'local roads' by territorial authorities.

5. The majority of injured pedestrians are struck while crossing the road, away from intersections and pedestrian crossings, and within two kilometres of home. More than 60% of those hospitalised because of their injuries live in the three regions with the largest urban populations - Auckland, Wellington and Canterbury.

6. Recent trends show poor progress on improving pedestrian safety compared to other road user groups. On roads with speed limits of 50 km/ph or less - *the roads on which the majority of pedestrian crashes occur* - pedestrian fatalities have risen from 29% of road fatalities (1994-1996) to account for 36% of all road fatalities (1997-1999).

7. For children, those who continue to walk may be at increasing risk of injury. When comparing the five year period 1993-1997 with the five years previous, there was no progress achieved in reducing New Zealand's rate of child pedestrian hospitalisation per head of population - *even though children's walking activity declined by 10% over the period.* Children living in the Auckland region have a particularly high rate of hospitalisation per head of population, and this rate appears to be rising.

Ensuring the future of walking as a transport mode

Walkable communities at the heart of ensuring a healthy future for walking.

1. Walking will not simply take care of itself as a transport mode. For pedestrian activity to remain *viable* and *safe*, pedestrian issues must be better considered in our urban planning, and walking better integrated into our transport research and planning, road management and road safety decision making.

2. For walking to be a transport mode of *choice*, 'walkable communities' are required - communities with safe, direct and pleasant walking environments, and destinations within walking distance.

3. This may require a shift in the way we approach pedestrian safety - from simply looking at reducing pedestrian crashes, to a focus on providing pedestrians with safe mobility in and around their local communities.

4. Creating walkable road environments is cost effective in comparison to other transport modes. For less than the cost of building a single kilometre of motorway, it is possible to achieve a safe, direct and pleasant road environment for pedestrians within an existing urban community of 50,000 people. The resulting road environment will benefit not only pedestrians, but other road user groups such as cyclists and public transport users, as well as road safety.

National Pedestrian Project, October 2000

INFORMATION SOURCES, DEFINITIONS & LIMITATIONS

This *Profile* aims to provide an overview - or 'snap shot' - of pedestrian activity and injury in New Zealand, using data from existing sources of information. Often this has involved undertaking further analysis of the data from a pedestrian perspective. Primary data sources are listed below. Where other sources have been used, these are noted next to the material in question.

Existing data sources provide important information.

PEDESTRIAN ACTIVITY IN NEW ZEALAND

NEW ZEALAND TRAVEL SURVEYS

National pedestrian activity information in this profile is based on data collected for the *New Zealand Travel Surveys*, 1989/90 and 1997/98. These surveys involved a sample of more than 4,000 and 8,000 New Zealand households respectively keeping detailed travel records for two day periods over one year. Work/commercial travel undertaken on behalf of an employer was included in the survey.

Data were collated, analysed and expanded using known demographics to provide national estimates of household travel in New Zealand. Comparisons between the two surveys were done after removing the travel trips of 0-4 year olds, as this group was not included in the 1989/90 survey. Data analysis support was provided by Research & Statistics, Land Transport Safety Authority.

"TRIPS", 'WALK TRIPS' AND 'JOURNEYS' - UNDERSTANDING THE KEY TRAVEL TERMS USED IN THIS PROFILE

'TRIPS' – The *New Zealand Travel Survey* (NZTS) divides our travel into the smallest possible units, referring to each 'leg' of a journey as a separate 'trip'.

Take, for example, a mum dropping two children off at their school's gate before driving on to work, parking and walking the last two blocks to her inner city office. In the NZTS, the travel of each person in this scenario is counted separately, with new trips beginning whenever the purpose of travel or the mode of transport used changes. In all, a total of five 'trips' would be recorded in the NZTS for the above scenario:

- one 'vehicle driver trip' 'to transport passengers' (mum dropping off the kids at school)
- two 'vehicle passenger trips' for 'education' purposes (two children being dropped at school)
- one 'vehicle driver trip' to 'work - main job' (mum driving from the school to her car park)
- one 'walk trip' to 'work - main job' (mum's walk from her car park to her office).

'WALK TRIP' – To be included in the NZTS as a 'walk trip', pedestrian activity must be for a distance of at least 100 metres or involve crossing a road. As a result, the NZTS does not capture all our pedestrian activity. For example, while it will easily capture a driving trip to a local shopping precinct, pedestrian activity such as walking between shops and services within that precinct may well be underestimated. It is worth noting that *in terms of time spent in the road environment*, a pedestrian journey of 100 metres is roughly equivalent to a journey of one kilometre undertaken in a motor vehicle.

'JOURNEYS' – Sometimes, one 'trip' is enough to fulfil a specific travel purpose (e.g. the two children in the above example being driven directly to the school gate). In other cases, two or more 'trips' or 'legs' using different modes are required to fulfil a purpose (e.g. the journey to work in the above example, in which a car trip and a walking trip were required). In this *Profile*, the travel required to fulfil a specific purpose is referred to as a 'journey'.

PEDESTRIAN INJURY ON NEW ZEALAND ROADS

LTSA CRASH ANALYSIS SYSTEM

Pedestrian crash data (including fatalities) were supplied from the LTSA Crash Analysis System (CAS). CAS contains computerized records of all crashes on public roads reported to LTSA by the NZ Police nationally. For this profile, analysis was undertaken of all (5249) pedestrian crashes recorded for the five year period, 1993-1997. This was supplemented by further research and analysis of a statistically random sample of 100 national pedestrian crashes for specific distance, road classification and roadside environment factors.

LIMITATIONS OF LTSA'S CRASH ANALYSIS SYSTEM FOR THIS ANALYSIS

The CAS data base offers a wealth of valuable information on pedestrian crashes nationally. However it is important to note its limitations:

a) Information on injury incidents not involving a motor vehicle is not collected. An injury incident in which an elderly pedestrian is hospitalised with a broken hip after tripping and falling on a stretch of poorly maintained footpath will not, therefore, be included, even though the incident took place during a transport activity, and within the road corridor.

b) Under-reporting is recognised as a difficulty with the database. For example, LTSA crash statistics for the Auckland region showed a 43% decrease in serious pedestrian crashes (i.e crashes requiring treatment at a hospital) between 1988 and 1997. However hospitalisation statistics showed that pedestrian hospitalisations in the region actually increased by 11% over that time. During the period, under-reporting worsened, with the ratio of reported crashes averaging only 37% over the last five years, down from 51% for the five years previous. Because of this, hospital discharge data rather than reported injuries have been used to establish injury rates.

c) Most crash reports are not the result of intensive crash investigation. They are written by police, operating under time constraints, often in difficult circumstances. The primary role of the officer filling in the report is to establish the facts of an incident, rather than look, for example, at how an environment might be improved to influence safety. As a result, road factors contributing to crashes may not necessarily be noted. Yet crash investigations frequently find that crash sites for which no environmental factors are recorded on the crash report, actually require significant work to improve their level of safety.

d) Crash reports are often reliant on 'self-reporting', e.g. by drivers on their speed of travel before the crash. This may lead to contributing factors such as speed being underestimated in the database.

HOSPITAL DISCHARGE DATA & SOCIAL COST STATISTICS

Hospitalisation and social cost statistics were supplied by LTSA's Research & Statistics Section. Hospitalisation statistics are based on New Zealand Health Information Service hospital discharge data for pedestrians injured on public roads for the five year period 1993-1997. To establish trends, this period was compared with the previous five year period, 1988-1992. Risk per 100,000 head of population was calculated using the averaged number of injuries per annum for the period in question, and New Zealand Census population figures for either 1991 or 1996.

IMPORTANCE OF WALKING; ENSURING THE FUTURE OF WALKING

Consultation and review of literature used to enhance the picture.

THE NATIONAL PEDESTRIAN PROJECT

During 1999/2000, the National Pedestrian Project (NPP) undertook a series of linked pedestrian projects funded by the Road Safety Trust. In addition to providing representation and advocacy for pedestrians in a variety of decision-making forums, its work included research, national consultation and dissemination of information on pedestrian issues, activities & international 'best practice'.

Sections in this *Profile* on the importance of walking and ensuring a healthy future for walking have drawn on the NPP's consultation work, as well as material from a variety of international sources. Some of these sources are listed below:

- *Australian Pedestrian Charter,* Pedestrian Council of Australia, 1999
- *Quantifying the Benefits of Non-Motorized Travel for Achieving TDM Objectives,* Todd Litman, Victoria Transport Policy Institute (Canada), 1999
- *The Importance of Walking,* Mayer Hillman (UK), 1998
- *Rate the Walkability of Your Community,* Partnership for a Walkable America (USA)
- *Pedestrian Level of Service,* City of Fort Collins (USA)
- *How to enhance walking and cycling instead of short car trips and to make these safer,* WALCYNG Project (a European Commission funded project), 1998
- *Making Walking and Cycling Safer: Lessons from Europe,* John Pucher and Lewis Dijkstra, Department of Urban Planning, Rutgers University, New Jersey (USA), 2000

SETTING THE SCENE - THE IMPORTANCE OF WALKING AS A TRANSPORT MODE

Walking is an essential component of our transport mix, offering significant benefits to individuals and communities, as well as to our transport system.

AN ESSENTIAL MODE FOR THOSE WITH LIMITED ACCESS TO MOTOR VEHICLES

Walking is a crucial travel mode for those with limited access to cars, providing transport independence on its own for short journeys, and in association with public transport for longer journeys. This is particularly important given the significant proportion of New Zealanders with limited access to a car - a situation reflected in the following statistics:

• Approximately one in ten New Zealand households (11.5%) do not own a motor vehicle (*New Zealand Official Yearbook, 1998, Statistics New Zealand*). While car ownership is on the rise, it is rising most quickly in households that already own a motor vehicle. The rate of households without a motor vehicle has remained relatively stable, dropping only 2% since 1986.

• More than a quarter of the population is under the legal driving age.

• Not everyone of driving age learns to drive - including around 7% of women in their 30's and 40's and one in five women aged 65 plus.

• New Zealand has an aging population. In the future, more of the driving population may be affected by increased infirmity or a reduction in driving confidence - factors that can limit driving activity.

• Currently, 15% of trips by drivers in private motor vehicles are undertaken for the purpose of transporting others to destinations (see *calculation note, 'Why we walk', page 11*).

Photo: Safe Waitakere

AN EFFICIENT AND SUSTAINABLE MODE FOR SHORT JOURNEYS

The sustainability of our urban transport system depends both on increasing the efficient use of the transport network by motorised traffic *and* increasing the use of non-motorised modes such as walking for short trips.

While much of our transport planning and thinking has traditionally focused on longer distance travel, 30% of our land travel trips are for distances of under two kilometres.

Note that this does not include walking trips (18.7% of our travel trips), as distance travelled was not collected for these. When the percentage of walking trips which have been estimated to be for distances of under two kilometres (see page nine) are included, this 30% figure rises to include around 46% of all travel trips undertaken by households in New Zealand.

The high proportion of short trips in our travel also holds true when looking specifically at private motor vehicle trips. Again, 30% of private motor vehicle trips are for distances of under two kilometres in length. These short motor vehicle trips:

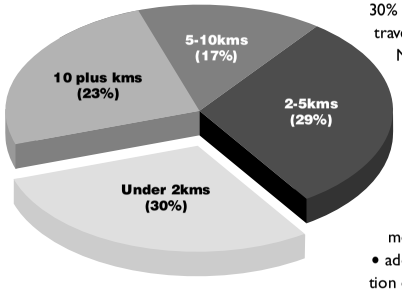
• add to increasing traffic volumes/congestion on our urban collectors and arterials

• impact negatively on access and safety for those who continue to walk in our communities

• contribute disproportionately to vehicle emissions within communities, due to the high level of emissions from the 'cold starts' associated with many short trips.

For short trips, walking is an efficient and sustainable mode. It causes virtually no noise or air pollution, and the only energy it requires is provided directly by the traveller. It requires little space, and is economical as a transport mode, costing far less than auto and public transport, both in direct user costs and in terms of public infrastructure required.

Walking will be particularly important in our major centres as they move toward higher density communities that facilitate and rely on increased pedestrian activity.



PERCENTAGE OF HOUSEHOLD TRAVEL TRIPS BY TRIP LENGTH (EXCLUDES WALKING TRIPS)

AN INTEGRAL PART OF MOST PUBLIC TRANSPORT JOURNEYS

Most public transport journeys involve a walking component. Effective public transport relies in part on being able to walk *to* and *from* public transport in an environment that is safe, direct and pleasant.

WHEN WE STEP OUT OF OUR CARS, WE ARE ALL PEDESTRIANS

Many of our motor vehicle trips include a pedestrian component. In the Auckland Region, analysis of data gathered as part of a 1992 survey of regional household travel found that 36% of household travel journeys combined motor vehicle travel with pedestrian activity (*Auckland Regional Pedestrian Profile, Auckland Regional Council, 1999*).

BEYOND TRANSPORT - THE ECONOMIC, HEALTH & SOCIAL BENEFITS OF WALKING

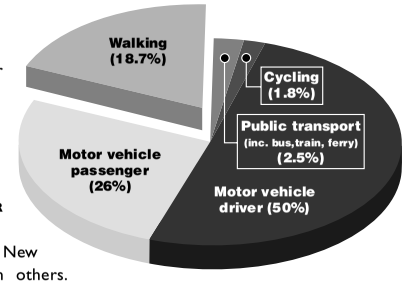
The health benefits of walking to individuals are well recognised. It is the most accessible form of exercise for improving cardio-vascular fitness, reducing the risk of heart disease and controlling obesity.

However, pedestrian activity also plays an important role in maintaining the health and well-being of our communities - enhancing their liveliness, providing the 'eyes on the street' that help keep our neighbourhoods safe, and enabling older members of the community to remain socially connected.

Walking is also good for local economies. Pedestrians provide the 'foot traffic' that is essential to many businesses, particularly in local communities, while pleasant pedestrian environments encourage tourists to spend more time - and money - in our urban environs.

Overview of pedestrian activity in New Zealand

Extent of our pedestrian activity



Percentage of household travel trips by mode

Nearly one in five travel trips undertaken on foot

Walking makes up a significant proportion of the travel of New Zealanders. According to the New Zealand Travel Survey (1997/98), of the more than six billion trips estimated as being undertaken by New Zealand households annually, 1.1 *billion* (18.7%) are undertaken on foot.

Overall, walking is the most commonly used form of transport after private motor vehicle use. Walking accounts for seven times as many trips as does public transport, 10 times as many trips as cycling.

As a result of their walking activity, New Zealanders spend 215 million hours in the road environment annually as pedestrians, and make 2.4 *billion* road crossings on foot.

Walking accounts for one in three of our trips to education; one in five of our shopping and personal business trips; one in 5.5 of our trips to work.

Walking more prevalent in regions with larger urban populations

People in some regions of New Zealand walk more than in others. Walking is most prevalent in Wellington and Taranaki, where more than one quarter of trips are made on foot. Generally it is also more common in regions with major urban populations, including Canterbury, Auckland and Otago. As would be expected, in regions with significant rural populations, walking accounts for a slightly smaller percentage of household travel. For example in Southland, it accounts for only one in eight trips.

Nature of our pedestrian activity

Walking done on its own *and* in association with other transport modes

In the *New Zealand Travel Survey*, two kinds of pedestrian trips can be identified.

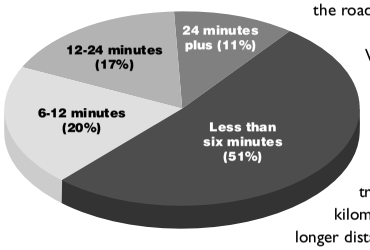
The majority of our walking trips (70%) involve walking as the sole mode of transport used to fulfil a single purpose - for example, a child walking from home to school solely on foot. Usually this type of walking journey is undertaken in or around local communities.

Other pedestrian trips are part of 'multi-mode' journeys. This type of journey combines trips by two or more modes to fulfill a single purpose - for example, a worker walking to a bus stop, travelling between suburbs by bus, then getting off and walking at the other end to their place of work. Walking trips undertaken as part of 'multi-mode' journeys account for 30% of our walking trips nationally.

The involvement of walking in 'multi-mode' journeys appears to be particularly important in some parts of urban New Zealand (see *page 8, 'When we step out of our cars we are all pedestrians'*).

Short trips most common, but 30% likely to be over a kilometre in length

Walking is most commonly used for short trips in the road environment.



Percentage of walking trips by duration

While the New Zealand Travel Survey does not currently record distances for walking trips (only times), based on a walking speed of 12 minutes per kilometre, it appears that 70% of our walking trips are for distances of under one kilometre, while 30% are likely to involve longer distances.

Journeys undertaken solely on foot tend to be longer in duration, with 34% lasting for more than 12 minutes (or a distance of approximately one kilometre or longer), compared to only 15% of walking trips undertaken as part of 'multi-mode' journeys.

It is worth noting that short durations and distances are also common within our motorised transport trips. For example, 52% of all trips undertaken by drivers of private motor vehicles last less than 10 minutes, 30% are for distances under two kilometres, and 13% are for distances under one kilometre.

**A figure of 12 minutes per kilometre is given by the Australian Road Research Board as an average walking speed for an unimpeded pedestrian. More time may be required in 'stop-start' urban walking environments or for children and older adults who are likely to have slower walking speeds. On the other hand, runners and commuting walkers may take less time to cover a similar distance on quieter suburban streets.*

Who walks

We walk throughout our lives – but especially when young, and as seniors

While, overall, walking accounts for 18.7% of our travel trips, for some age groups, it is particularly significant as a transport mode.

Children and young people

Forty three percent of our walking trips are undertaken by 'under 25s' (38% of the population). Nationally walking accounts for 25% of all travel trips for those aged 5-24 years, and slightly more (28%) of trips for 10-14 year olds. 'Walk only' trips feature highly amongst children, accounting for 80% of their walking activity, while over a third of the walking trips of young people are as part of 'multi-mode' journeys (e.g. in association with public transport).

Adults

Just under half of walking trips are undertaken by people aged 25-64. However, for this age group walking trips decline in relation to other modes, ebbing to 13.5% of all travel trips for those in their 40's. Around a third of the walking trips of adults involve walking as part of a 'multi-mode' journey.

Older adults

With retirement, pedestrian activity rises again in importance. Those aged 65 or older undertake 10% of our walking trips. Walking accounts for 22% of all travel trips for this age group, and 27% of trips for those aged 80 years plus. Eighty percent of the walking trips of older adults are 'walk only' trips in which walking is the sole mode of transport used to fulfil a purpose.

Females make the most walking trips, except as children

As children, males make slightly more walking trips than females, however from 15 years of age, this situation reverses. In all, females undertake 55% of all walking trips. This is most pronounced between the ages of 20-55, when women undertake 58% of walking trips, compared to 42% for males.

Overall, walking is more important in the transport mix for women, accounting for a higher percentage of their household travel trips (20%) in comparison to males (17%).

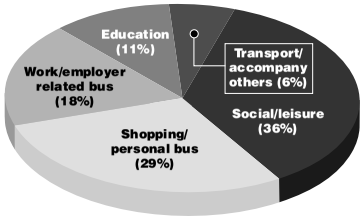
Time spent walking varies with ethnicity and economic status

Pacific peoples, then Maori spend the most time in the road environment as pedestrians, with Europeans spending the least time. Among people aged 18 years or older, those at the higher and lower ends of the economic spectrum (with incomes over $50,000 or under $20,000) spend the most time walking.

Why we walk

We walk for a wide variety of purposes, but social/leisure and shopping trips are most common.

The following table compares the purpose breakdown of walking trips, with that of household travel trips by all modes combined.*



Percentage of walking trips by purpose

Trip purpose	Walking trips	Trips by all transport modes combined
Social or leisure purposes	36%	30%
Shopping / personal business	29%	28%
Work journey and employer business	18%	22%
Education related	11%	6%
To transport /accompany others	6%	15%

In comparison with trips by all modes combined, walking trips are more likely to occur for education, social/leisure or shopping purposes, and less likely to occur for work purposes or to transport or accompany others to destinations for their own purposes (e.g. walking a child to school).

'Walk only' trips are most commonly undertaken for social/leisure purposes (39% of such trips) or for shopping/personal business (30%). Walking as part of a 'multi-mode journey' is most commonly undertaken for shopping/personal business (29% of such trips), work (25%), or social/leisure purposes (25%).

Nearly two thirds of walking trips undertaken for education purposes are 'walk only' trips.

**Thirty one percent of all household travel trips involve trips home from one or more of the above activities. These are classified separately in the NZTS, with their purpose listed as 'home'. These were excluded when calculating the percentages shown above.*

Trends in pedestrian activity

Walking as a transport mode certainly 'alive' – but is it 'well'

As the above figures show, walking as a transport mode in New Zealand is very much alive. However, while the number of annual transport trips undertaken on foot rose slightly between 1989/90 and 1997/98, this rise did not keep pace with population growth.

Walking also lost ground in terms of the percentage share it makes up of our household travel, dropping from 21% of household travel trips in 89/90, to under 19% in 97/98.

Fewer trips made solely on foot, children & young people walking less

The decline in our walking activity is most apparent in two areas - our children and young people are walking less, and we are making fewer trips *solely* on foot. Between 1989/90 and 1997/98:

- The number of walking trips undertaken by those aged between five and 20 years of age declined by 10%.
- Being driven by car took over from walking as the most common mode of transport for the school journey. Among journeys to school for 5-17 year olds, walking used as the sole mode of transport declined in its mode share from 36% to 26%, while journeys involving a child being driven rose from 27% to 43%.
- The percentage of our travel journeys in which walking was the sole mode of transport used dropped 3% (from 17% in 1989/90). Taking into account population growth, this equates to approximately 400,000 fewer 'walk only' trips being taken *each day* in New Zealand than was the case in 1989/90.

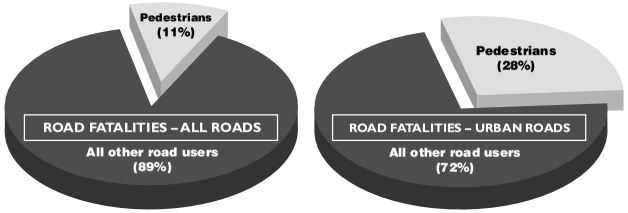
As a nation we are undertaking 400,000 fewer 'walk only' trips daily.

Photo:AA Directions

Overview of pedestrian injury on New Zealand roads

Extent of the problem

One in nine road deaths nationally, one in four deaths on urban roads



Percentage of pedestrian fatalities of all road user fatalities

From 1993-1997, one in nine New Zealanders killed on the roads died as a pedestrian. On average, every week in New Zealand, nearly 20 pedestrians (around 1,000 annually) are injured seriously enough to require hospitalisation, and at least one (65 annually) dies.

The significance of pedestrian injury in the road safety picture increases for urban areas. From 1993-1997, on urban roads (i.e. those with speed limits of 70 km/ph or less), pedestrians accounted for 28% of road fatalities, 12% of reported injury crashes and 18.6% of the social cost of injury crashes.

Two thirds of reported pedestrian casualties (and 61% of hospitalisations) occur in the three regions with the largest urban populations - Auckland, Wellington and Canterbury.

$290 million in social costs annually

The social cost of road crashes involving pedestrians is estimated at $290 million annually (four year average to 1999)*.

Part of the high social cost of pedestrian crashes relates to the relative severity of many pedestrian injuries. On average, pedestrians who are hospitalised cost twice as much to treat as hospitalised motor vehicle occupants (*Inpatient costs of injury due to motor vehicle traffic crashes in New Zealand; Langley et all, 1993*).

ACC has estimated its costs for a six year old child, injured as a pedestrian, who loses a leg and suffers a serious head injury, at between $1.4 million and $4 million over their lifetime, dependent on their ability to support themselves in adulthood. (*Safekids National Child Pedestrian Factsheet, 1996*)

**Social cost is the measure of all costs that a road crash inflicts upon the community - on road users, emergency service providers and others. It includes not just material losses and resource costs (e.g. to treat pedestrian injuries), but also pain and suffering.*

Why speed and pedestrians don't mix

Speed and pedestrians are a lethal combination, for two reasons:

- *The faster a driver goes, the more difficult it is for them to avoid hitting a pedestrian in their path.* An alert driver travelling at 50 km/ph can just stop in time to avoid a pedestrian who steps out onto the road three house sections away (45 metres). The same driver, travelling at 60km/ph will still be travelling at 44 km/ph when the pedestrian is hit.
- *The faster the speed at which a pedestrian is hit, the more serious their injuries.* A pedestrian hit at 30 km/ph has a 5% chance of dying, compared with a 40% risk of death at 50 km/ph. Hit at 70 km/ph, 96% of pedestrians will die. (*Ashton, 1982*)

WHO GETS INJURED

Pedestrian injury occurs among all age groups, with children accounting for the highest percentage of hospitalisations.

KIDS AND OLDER ADULTS MOST AT RISK

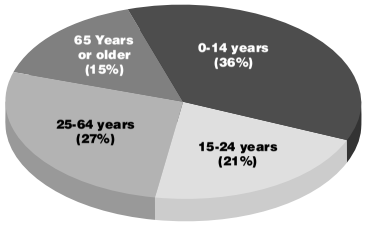
Taking into account their percentage of the population, children aged 0-14 years remain at most risk of hospitalisation, with a rate of 33.5 pedestrian hospitalisations per 100,000 head of population. They are followed by older adults aged 65 plus and young people aged 15-24 years, both with rates of 26.5 per 100,000. Adults aged 25-64 years are least at risk (11 per 100,000).

The higher rates of risk for children and older adults also hold true when taking into account the number of trips taken by various age groups, and time spent in the road environment, however the risk for young people drops almost to that of adults when risk is calculated against these factors.

Children in the Auckland region (29% of the nation's children) account for 44% of the nation's child pedestrian hospitalisations. Their rate of pedestrian injury hospitalisation is 49.5 per 100,000.

Older adults are more likely to die of their injuries (accounting for a quarter of fatalities), a fact likely to reflect their greater physical fragility.

Around 30% of those aged 15 years or older who were killed as pedestrians between 1994 and 1996 were found to have alcohol levels over the legal driving limit. This equates to around 15 per year, or 8% of all pedestrian fatalities (*LTSA Crash facts, Alcohol, 1997*).



PERCENTAGE OF PEDESTRIAN HOSPITALISATIONS BY AGE GROUP

PACIFIC PEOPLES AND MAORI

In terms of time spent walking in the road environment, Maori and Pacific peoples are at twice the risk of pedestrian hospitalisation as Pakeha.

The risk for Pacific children is particularly high - seven times that of Pakeha children, and three times that of Maori children. However, it is important to note that the vast majority of Pacific Island children in New Zealand live and undertake their walking in the type of busy urban road environments where pedestrian crashes are most likely to occur.

MORE MALES THAN FEMALES

Males account for 57% of reported pedestrian injuries, and 69% of fatalities.

AUCKLANDERS, ESPECIALLY THE REGION'S CHILDREN

Although home to only 30% of the country's population, the Auckland region accounts for 41% of the nation's hospitalised pedestrians. On the region's *urban roads*, pedestrians account for:

- nearly a third of road fatalities
- one in six reported injury crashes
- a quarter of the social cost of road crashes.

Children, 23% of the region's population, account for 43% of the region's pedestrian hospitalisations.

WHERE AND WHEN ARE PEDESTRIANS INJURED

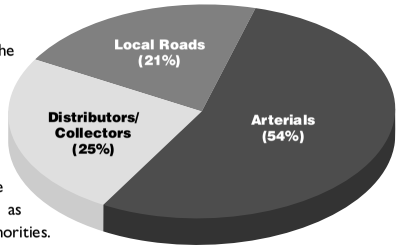
URBAN ROADS

Nine out of ten reported pedestrian injuries (92%) and nearly seven out of ten pedestrian fatalities (67%) occur on urban roads (roads with speed limits of 70 kilometres per hour or under). Most commonly, roads with 50 km/ph speed limits are involved.

ON MAIN ROADS, NOT MINOR ROADS

In New Zealand, the vast majority of our pedestrian injury crashes occur on the relatively busy urban roads that bisect our suburbs and communities. More than half occur on 'arterial roads', and a quarter on 'distributors / collectors'. Only one in five occur on streets designated as 'local roads' by territorial authorities.

PERCENTAGE OF PEDESTRIAN CRASHES BY URBAN ROAD TYPE



Eight out of ten pedestrian crashes occur at un-controlled sites.

CLOSE TO HOME

The majority (57%) of New Zealand pedestrians are injured locally, within two kilometres of home. This pattern of 'close to home' injury is most apparent for children and older adults.

Generally, the surrounding land use at the site of the crash is either residential (in over half of cases) or commercial in nature (in a third of cases).

'MID-BLOCK', AT UN-CONTROLLED SITES, AND ON THE 'NEAR SIDE' OF THE ROAD

The overwhelming majority (around 90%) of pedestrians injured on public roads are struck while crossing the road, as opposed to while walking on a footpath, walking along the side of a road, or, for example, 'playing' on the road.

The majority of reported pedestrian crashes (over 60%) occur mid-block, rather than at intersections. Eight out of ten occur at un-controlled sites, with around one in ten occurring on signalised crossings, and a further one in ten at or near a zebra crossing.

Sixty three percent of pedestrians are hit while on the near side of the road, rather than after they have crossed the centre line.

AT THE TIMES PEDESTRIANS ARE MOST LIKELY TO BE 'OUT AND ABOUT'

Not surprisingly, the majority of pedestrian crashes occur when pedestrians are most likely to be out and about - in good weather, and during daylight hours. For children, injuries peak in the after-school hours, with a further peak in the hour before school. For older adults, injuries peak late-morning and mid-afternoon. Injuries during the hours of darkness are more common among those aged 18 and older.

Crashes occur throughout the year, and throughout the week, with Sundays appearing the least common day, and Fridays the most common.

AUCKLAND STUDY PROVIDES INSIGHT INTO CIRCUMSTANCES OF CHILD PEDESTRIAN INJURY

Photo: Safekids

Children are among our most vulnerable pedestrians. Far more New Zealand children die as pedestrians on our public roads than die of violence, abuse or neglect; a similar number of children die as pedestrians as die of all infectious diseases combined (*NZHIS mortality statistics, 1993-1997*).

Forty four percent of child pedestrians hospitalised in New Zealand live in the Auckland region. A review by Auckland's Injury Prevention Research Centre (IPRC) of child pedestrian injury incidents on that region's public roads between January 1992 and February 1994 provides important information about where and when child pedestrian injuries occur. The review included 200 incidents in which children were seriously enough injured to be hospitalised (12 died). It found:

- Over 75% of children were injured when crossing roads while on their way somewhere (e.g. school, shops, a friend's home). Only 2% were injured while 'playing' in the street. A third (and 40% of school-aged children) were injured on the school journey.
- Sixty percent of children were injured within 500 metres of their home, 75% within a kilometre.
- Only 25% of incidents occurred on 'local' roads; 55% occurred on arterials/major principal roads. Three quarters of incidents took place on roads with more than 2,900 vehicles per day travelling on them; half on roads with more than 7,600 vehicles per day; and a quarter on roads with 16,700 vehicles or more per day.
- At nearly 50% of sites, the average speed of traffic travelling over the spot was more than the legal speed limit.
- Most children were injured mid-block (60%), or at intersections without crossings. Seventy percent of sites had no pedestrian crossing within 100 metres on either side. Only 13% were injured on pedestrian crossings.
- Children were more likely to be injured in lower socio-economic communities. The study report suggested that this may reflect both the riskier road environments faced by children in these communities, mixed with their higher levels of walking activity. Similar factors were suggested as an explanation for significantly higher rates amongst Maori and Pacific children - groups found to be more than twice as likely to walk home from school as Pakeha children.

Source: Safekids Decisionmaker Info Series #1: Child Pedestrian Injury in the Auckland Region, 1996

Pedestrian injury trends

Although the number of pedestrian fatalities in New Zealand has remained relatively stable since 1993, safety gains for pedestrians have been less than for other road user groups.

On roads with speed limits of 50 km/ph or less - *the roads on which the majority of pedestrian crashes occur* - pedestrian fatalities have risen from 29% of all road user fatalities from 1994-1996 to 36% of fatalities during 1997-1999.

Similarly, pedestrians now account for a higher percentage of the social cost of urban road crashes than in the past. The four year average (to 1999) shows pedestrians accounting for 21% of annual social cost of injury crashes on urban roads, up from 18.5% for the 1993-1997 period.

Injury risk remains high, especially for children

Poor progress has also been made in reducing our overall risk of serious pedestrian injury. The averaged annual rate of 21.5 pedestrian hospitalisations per 100,000 head of population for the five years 1988-1992, dropped only marginally to 20.5 over the following five year period (1993-1997).

This lack of progress is particularly alarming for children, whose much higher rate of risk (33.5 hospitalisations per 100,000) has not shifted - *even though this group has experienced a 10% decline in walking activity* (as discussed in the previous section).*

One would expect that if safety for child pedestrians was improving, a 10% drop in exposure will have been accompanied by a similar drop in their rate of hospitalisation. Instead, it appears that those who continue to walk may actually be at increased of injury.

Children living in the Auckland region are of most concern. Their rate of hospitalisation rose from 41.5 to 49.5 per 100,000.

**Nor was there any change in the high risk of hospitalisation for children when rates were calculated both against number of walking trips undertaken, and time spent in the road environment.*

Poor progress on pedestrian safety compared to other road user groups.

Ensuring the future of walking as a transport mode

Do we want a culture that walks?

As a nation we are undertaking less journeys per capita in which walking is the sole mode of transport used. In 1997/98 this resulted in 400,000 less 'walk only' trips being undertaken *daily* by New Zealanders than was the case in 1989/90. A continued decline will have serious consequences for our transport system and our communities (see *page seven, 'Setting the scene - the importance of walking as a transport mode'*).

At this point in New Zealand's transport development, the question needs to be asked: *Are we content with this decline in walking (and our increasingly car-bound culture), or do we want walking to remain a safe, viable and chosen transport mode?*

Taking a strategic approach to walking

In New Zealand's car-centred society, walking faces many serious challenges. Yet rarely it is approached as strategically as other modes of transport. If walking is to remain safe and viable - even flourish as a transport mode - it requires the same degree of strategic thought and attention given to the needs of private motor vehicle use, commercial travel, or public transport.

The question needs to be asked: Do we want a culture that walks?

Starting from a solid base of information

For walking to be approached strategically, more information is needed on the 'who, what, where, when and why' of walking - and *non-walking* - within our regions and communities. Currently, information gathered on pedestrian activity appears limited in comparison to other modes. Similarly, information about short trips within communities and information on non-work related travel - *travel in which walking trips feature highly* - appears less likely to be gathered than information on travel undertaken between communities or for work purposes.

The transport question in the New Zealand Census provides an example of this. It focuses solely on the journey to work - *less than a fifth of all household travel trips*. It then asks only for the *main* way in which respondents travelled (i.e. the mode that involved the longest time), with the result that the question fails to capture the pedestrian activity of commuters who may walk significant distances to or from a bus stop, or from where they park their cars to their place of work.

Only with good information can appropriate objectives be set regarding the level and type of walking activity desired in our communities, and realistic strategies developed to enable these to be achieved.

Ensuring the 'walkability' of our communities

Maintaining and enhancing the 'walkability' of our communities is at the heart of ensuring a healthy future for walking as a transport mode. 'Walkable' communities have safe, direct/time efficient and pleasant walking environments, as well as destinations within walking distance. If any one of these four elements is missing, walking is less likely to be a transport mode of choice - no matter how much it is promoted as a transport mode.

Creating communities and road environments that work for pedestrians as well as motor vehicles requires moving pedestrians from the periphery to the centre of our urban planning and road management decision making.

It may also require a shift in the way we approach pedestrian safety. The overall goal of a 'walkable community' model is safe mobility for pedestrians, with safety addressed within a context of improving access for pedestrians. In other words, rather than simply looking at reducing pedestrian crashes, safety thinking becomes focused on improving access for pedestrians within our communities, doing this in the safest way possible.

Walkable Communities at the heart of ensuring a healthy future for walking.

A 'walkable' community for 50,000 people for the cost of a kilometre of motorway

Creating walkable road environments is cost effective in comparison to other transport modes. For less than the cost of building a single kilometre of motorway, it is possible to achieve a safe, direct and pleasant road environment for pedestrians within an existing urban community of 50,000 people*, as well as undertake the education, enforcement and promotion programmes required to further enhance safety and maximise its use.

The resulting environment will not only benefit the community's residents as they undertake pedestrian activity. It will also be conducive to cycling and public transport use, and will aid in the reduction of motor vehicle speeds, a significant contributing factor to many urban road crashes.

**Based on cost estimates for engineering and other treatments as provided by Waitakere City, Transit New Zealand, and LTSA.*

Copies of this Profile can be downloaded as a PDF file from the following web sites:

- Land Transport Safety Authority: www.ltsa.govt.nz
- Energy Efficiency and Conservation Authority: www.eeca.govt.nz